

Claims

1. A linoleum-based planar structure characterized in that it contains over the whole cross section flakes comprising an organic polymeric material, the flakes being compatible with the linoleum base composition and having a particle size in the range of 0.5 to 30 mm and a thickness in the range of 1.0 to 400 μm .
2. The linoleum-based planar structure according to claim 1, wherein the thickness of the flakes is within the range of 1.5 to 50 μm .
3. The linoleum-based planar structure according to claim 1 or 2, wherein the organic polymeric material is selected from the group consisting of a material containing the reaction product of at least one dicarboxylic acid or one polycarboxylic acid or derivatives thereof or a mixture thereof with at least one epoxidation product of a carboxylic acid ester or a mixture of said epoxidation products, poly(meth)acrylates, polyvinylacetates, and a mixture thereof.
4. The linoleum-based planar structure according to claim 3, wherein the dicarboxylic acid is maleic acid, itaconic acid, fumaric acid, succinic acid, methylsuccinic acid, malic acid, furandicarboxylic acid, phthalic acid, tartaric acid, or citraconic acid, or a mixture thereof containing at least two of these acids.
5. The linoleum-based planar structure according to claim 3, wherein the polycarboxylic acid is selected from citric acid, aconitic acid or trimellitic acid.

6. The linoleum-based planar structure according to anyone of claims 4 to 6, wherein the derivative of the di- or polycarboxylic acid is an anhydride or a partial ester.
- 5 7. The linoleum-based planar structure according to claim 6, wherein the alcohol component of the partial ester is a polyol.
8. The linoleum-based planar structure according to anyone of claims 3 to 7, wherein the mixture of at least one di- or polycarboxylic acid or derivatives thereof is a mixture of a partial ester of maleic acid anhydride and dipropylene glycol with citric acid.
- 10 9. The linoleum-based planar structure according to anyone of claims 3 to 8, wherein the epoxidation product of a carboxylic acid ester is epoxidized linseed oil, epoxidized soybean oil, epoxidized castor oil, epoxidized rapeseed oil or vernonia oil, or a mixture thereof containing at least two of these epoxidized products.
- 15 10. The linoleum-based planar structure according to anyone of claims 1 to 9, wherein the flakes are present in an amount ranging from 1 to 15 wt.-%, based on the total amount of linoleum base composition.
- 20 11. The linoleum-based planar structure according to anyone of claims 1 to 10, wherein the planar structure has a thickness in the range of 0.8 to 4.0 mm.
- 25 12. The linoleum-based planar structure according to anyone of claims 1 to 11, wherein the flakes are single-coloured or multi-coloured.
13. The linoleum-based planar structure according to claim 12, wherein the flakes are provided with an optical brightening agent, a fluorescent agent or a phosphorescent agent or a mixture thereof.
- 30 14. A process for producing a linoleum-based planar structure according to one or more of the preceding claims 1 to 13, comprising the steps of:

- (a) preparing a linoleum base composition,
(b) adding flakes comprising an organic polymeric material, the flakes being compatible with the linoleum base composition and having a particle size in the range of 0.5 to 30 mm and a thickness in the range of 1.0 to 400 μm to the linoleum base composition, and
(c) rolling out the linoleum composition obtained in step (b) by means of a roller assembly into a linoleum sheet.

15. The process according to claim 14, wherein the step (c) concurrently includes the steps of providing a carrier in web form and coating one side of the carrier with at least one upper layer of the linoleum composition obtained in step (b).

16. The process according to step 14, further comprising the steps of:

- (d) cutting the linoleum sheet obtained in step (c) into chips by means of rotating cutters,
(e) rolling out the thus obtained chips by means of a roller assembly into a linoleum sheet, and
(f) optionally applying the linoleum sheet obtained in step (e) as a wear layer onto a single layer linoleum web to obtain a multi-layered linoleum floor covering.

17. The process according to claim 16, wherein before step (e) chips of different color are added to the chips obtained in step (d).

18. The use of the planar structure according to anyone of claims 1 to 13 as a floor covering.